

Appln No. 09/922,001

Amdt date April 11, 2005

Reply to Office action of December 14, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-26. (Cancelled)

27. (New) A CWDM add/drop multiplexer structure for a CWDM network, the CWDM add/drop multiplexer structure comprising:

a CWDM laser array comprising a plurality of laser sources;
and

a common active temperature controlling element thermally coupled to the plurality of laser sources of the CWDM laser array,

wherein the common active temperature controlling element maintains a controlled temperature environment around the plurality of laser sources of the laser array to maintain wavelength drifts of the plurality of laser sources to be less than a CWDM wavelength spacing of the CWDM network while the CWDM add/drop multiplexer structure is subjected to an outside temperature ambient experienced in an Outside plant (OSP) situation.

28. (New) The CWDM add/drop multiplexer structure as claimed in claim 27, wherein the controlled temperature environment is defined by a low reference temperature value and a high reference temperature value.

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29. (New) The CWDM add/drop multiplexer structure as claimed in claim 27, further comprising at least one further temperature sensitive device, and wherein the temperature controlling element also maintains the controlled temperature environment around the further temperature sensitive devices.

30. (New) The CWDM add/drop multiplexer structure as claimed in claim 27, wherein the temperature controlling element and the laser array are located inside a housing.

31. (New) The CWDM add/drop multiplexer structure as claimed in claim 30, wherein the temperature controlling element operates based on a measured temperature.

32. (New) The CWDM add/drop multiplexer structure as claimed in claim 31, wherein the measured temperature is an actual temperature inside the housing.

33. (New) The CWDM add/drop multiplexer structure as claimed in claim 31, wherein the measured temperature is an ambient temperature around the housing.

34. (New) A CWDM add/drop multiplexer structure as claimed in claim 33, wherein the ambient temperature is measured outside the CWDM add/drop multiplexer structure.

35. (New) The CWDM add/drop multiplexer structure as claimed in claim 30, wherein the housing comprises thermally insulated walls to reduce a passive thermal load.

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36. (New) The CWDM add/drop multiplexer structure as claimed in claim 30, further comprising heat generating components connected to the plurality of laser sources, and wherein controlling operation of the plurality of laser sources are located outside of the housing.

37. (New) The CWDM add/drop multiplexer structure as claimed in claim 27, further comprising a driver unit for each of the plurality of laser sources regulating a bias current of a respective laser source to compensate for variations in a power output of a semiconductor laser source as a result of a tolerated temperature range of the controlled temperature environment.

38. (New) The CWDM add/drop multiplexer structure as claimed in claim 37, wherein each driver unit regulates the bias current based on junction temperatures of the respective laser source.

39. (New) The CWDM add/drop multiplexer structure as claimed in claim 37, wherein each driver unit regulates the bias current based on the power output of the respective laser source.

40. (New) The CWDM add/drop multiplexer structure as claimed in claim 37, wherein each driver unit provides a modulation current to the semiconductor laser source.

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41. (New) The CWDM add/drop multiplexer structure as claimed in claim 27, wherein the temperature controlling element comprises a dual function heating/cooling device.

42. (New) The CWDM add/drop multiplexer structure as claimed in claim 41, wherein the dual function heating/cooling function comprises a TE device.

43. (New) The CWDM add/drop multiplexer structure as claimed in claim 27, further comprising a plurality of CWDM filters each having a pass band substantially equal to the CWDM wavelength spacing of the CWDM network.

44. (New) The CWDM add/drop multiplexer structure as claimed in claim 28, wherein the high reference temperature is at least 70°C.

45. (New) The CWDM add/drop multiplexer structure as claimed in claim 28, wherein the low reference temperature is 0°C or less.

46. (New) A CWDM network incorporating the CWDM add/drop multiplexer structure as claimed in claim 27.